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ON PALESTINE APHIDS, WITH DESCRIPTIONS OF NEW SUBGENERA AND NEW SPECIES (HOMOPTERA, APHIDIDAE)

By D. Hille Ris Lambers

(*Bennekom, Netherlands*).

Communicated by Dr. W. J. Hall, M.C., F.R.E.S.

Manuscript received 4th September, 1947.

(Read 19th November, 1947.)

With 14 Text-figures.

Bodenheimer's *Prodromus Faunae Palestinae* (1) contains a list of Palestine aphids and this list includes a number of names with Börner as author. With the exception of *Aphis ruborum* and *Hyadaphis conica* (2) no descriptions seem to have been published of Börner's species in this paper. It is quite probable that some of the species which I now describe as new are indicated by one of these *nomina nuda*, but that is unavoidable.

A large number of aphid samples was received, mainly from Prof. Bodenheimer, partly without data. On this material the following notes are based. Species already listed by Bodenheimer are not mentioned, unless new data about their synonymy were discovered. The material is in the author's collection.

Aphis craccivora Koch.

A study of Koch's description shows that what many authors have called *medicaginis* Koch is not the species described by Koch under that name. *Aphis medicaginis* auctt. nec Koch is the species described by Koch as *Aphis craccivora* Koch, a species which infests many Leguminosae, but also other Dicotyledons. It is this species which Theobald described as *Aphis leguminosae*, and which, by several authors, was called *Aphis laburni* Kaltenbach. The latter identification is incorrect, as *laburni* is pulverulent and probably restricted to *Laburnum vulgare* and closely related species. Börner (3) described the real *Aphis medicaginis* Koch as *Doralis meliloti* sp. n., but in a manuscript note in my copy of this paper corrected the synonymy himself.

Aphis hederae Kaltenbach.

The material from Hedera from Palestine was quite typical. Another host of this species is *Aralia sieboldi* Hort., a common plant in houses in the Netherlands.

Aphis pseudeuphorbiae sp. n.

Apterous viviparous female.

Morphological characters. Body oval, about 1·35–1·60 mm. long. Tergum nearly completely membranous, but often with some very irregular sclerites on posterior half of abdomen, mainly spinally. Dorsal hairs like those on third antennal segment; eighth abdominal tergite with 2 hairs. Marginal tubercles small, on pronotum and first and seventh abdominal segment. Head normal. Antennae about $\frac{2}{3}$ length body, pale with dark apices, without secondary rhinaria; processus terminalis only $1\frac{1}{2}$–$1\frac{2}{3}$ times base of last segment, about $\frac{2}{3}$ of third segment. Antennal hairs of third segment about $\frac{1}{6}$ of median diameter of that segment. Rostrum reaching the hind coxae or nearly so; last segment just shorter than second joint of hind tarsi, with 2 hairs besides the 3 apical pairs. Siphunculi about $\frac{1}{12}$–$\frac{1}{10}$ length body, blackish, imbricated, about cylindrical, with small flange. Cauda rather elongated, not very thick and blunt, dark, just longer than the siphunculi, with 6–8 hairs. Legs pale with the apices of the femora darkish and the apices of the tibiae blackish; first segment of hind tarsi with usually 2 but sometimes 3 hairs.

Colour. Not mentioned.

Lengths in mm.:

				Prop. of antennal segments			
Body	Antennae	Siphunculi	Cauda	III	IV	V	VI
1·45	0·92	0·13	0·16	0·25	0·14	0·15	0·11+0·16
1·76	0·87	0·14	0·16	0·23	0·14	0·14	0·11+0·16

Locality and host-plant: Jericho, *Euphorbia lanata*, 7.vii.42.

Notes: This species resembles the other *Aphis* spp. from *Euphorbia* from Europe in general structure, but it differs in the almost wholly membranous dorsum of the apterae. It evidently belongs to the black aphids of the *craccae*-group.

Aphis punicae Passerini.

Roberti (24) has recently redescribed Passerini's species from Sardinia and from this description it would seem that there is no reason to consider *Aphis durantae* Theobald a different species. Hall (12) has already suggested that *Aphis punicella* Theobald, a species in which the aptera on the type slide has rhinaria on the third antennal segment, but the other apterous paratypes have not, might be a synonym of *durantae*. This is probably correct, as intermediates between alatae and apterae viviparae are not very rare in this group of the genus. *Aphis durranti* Das (5) is probably another synonym of *punicae*. In Palestine the species was collected on *Punica* and *Duranta*.

Aphis verbasci Schrank.

This remarkable aphis, which in Western Europe is rather uncommon, but which in Central Europe regularly infests a number of *Verbascum* species, was received from Palestine, where it lived both on *Verbascum sinuatum* and *Buddleia* species. Undoubtedly *Aphis buddleiae* Theobald is a synonym of this species.

Appelia tragopogonis Kaltenbach, **setosus** subsp. n.

Appelia tragopogonis hibernates as eggs on various *Prunus* species and spends the summer on *Tragopogon* species (15), where it also sometimes hibernates. It is also known as *Anuraphis amygdali* Buckton, *Appelia schwartzi* Börner, etc. The Palestine specimens from *Tragopogon longirostris* differ from European specimens from various hosts in having all the dorsal hairs rather long, while in European specimens at least those on the anterior abdominal tergites are very short. Therefore it seems correct to consider the Palestine form a distinct subspecies. Nevsky (20) also describes *tragopogonis* from *Tragopogon longirostris*. He may have dealt with the same subspecies.

Brachyunguis echinopis sp. n.

Apterous viviparous female.

Morphological characters. Body somewhat elongated oval, small, only 1·20–1·40 mm. long. Tergum markedly reticulated, especially marginally. Sclerotisation not distinguishable in the KOH-cleared specimens. Distinct, rather large, low, blunt, conical marginal tubercles present on pronotum and abdominal segments I and VII. Dorsal hairs normal, rather fine, acute, about as long as median diameter of third antennal segment; eighth abdominal tergite with 4–6 hairs. Head smooth; front evenly convex, without any frontal tubercles. Eyes with hardly developed triommatidion (ocular tubercle), small. Antennae of 6 or sometimes 5 segments, less than half as long as body, rather uniformly pigmented, only at apex darker; third segment without rhinaria, strongly constricted at its base and there only $\frac{1}{2}$ of its diameter in the middle; processus terminalis shorter than base of last segment. Antennal hairs about $\frac{3}{5}$ median diameter of third segment; on the base of last segment one particular hair opposite the rhinaria shorter than the others and conspicuous by always standing at right angles to the segment. Rostrum long and conspicuously thick, reaching to near the siphunculi; last segment long, usually longer than last antennal segment and twice or more the siphunculi, with 2 (–4) hairs besides the apical pairs. Siphunculi darkish, very short, only about $\frac{1}{15}$ length body, about $\frac{3}{4}$ of second joint of hind tarsi, with very small flange, with a few imbrications, somewhat tapering. Cauda darkish, just longer than the siphunculi, about as long as wide, bluntish triangular with convex sides, very hairy, with 16–22 curved hairs. Legs normal, rather short; first tarsal segments with 3, 3, 2 hairs.

Colour. Unknown, but probably dark.

Lengths in mm. and proportions of antennal segments:

No.	Body	Antennae	Siphunculi	Cauda	Prop. of antennal segments III	IV	V	VI
1.	1·28	0·53	0·07	0·09	100 :	40 :	(43+38)	
2.	1·28	0·50	0·07	0·10	100 :	36 :	(41+39)	
3.	1·40	0·52	0·08	0·09	100 :	42 :	39 :	(56+47)
4.	1·21	0·49	0·07	0·09	100 :	46 :	65 :	(77+69)

Locality and host-plant: Zikhron Ya'akov, *Echinops* sp., 3.vi.42.

Notes: It is with some reluctance that I describe this species as new because I am not familiar with the many Central Asiatic species recorded by Nevsky. As far as I can trace, none of his descriptions fit this species. Theobald's *Aphis pseudocardui* (25) is evidently also a *Brachyunguis* Das, but it differs from the species described here by its

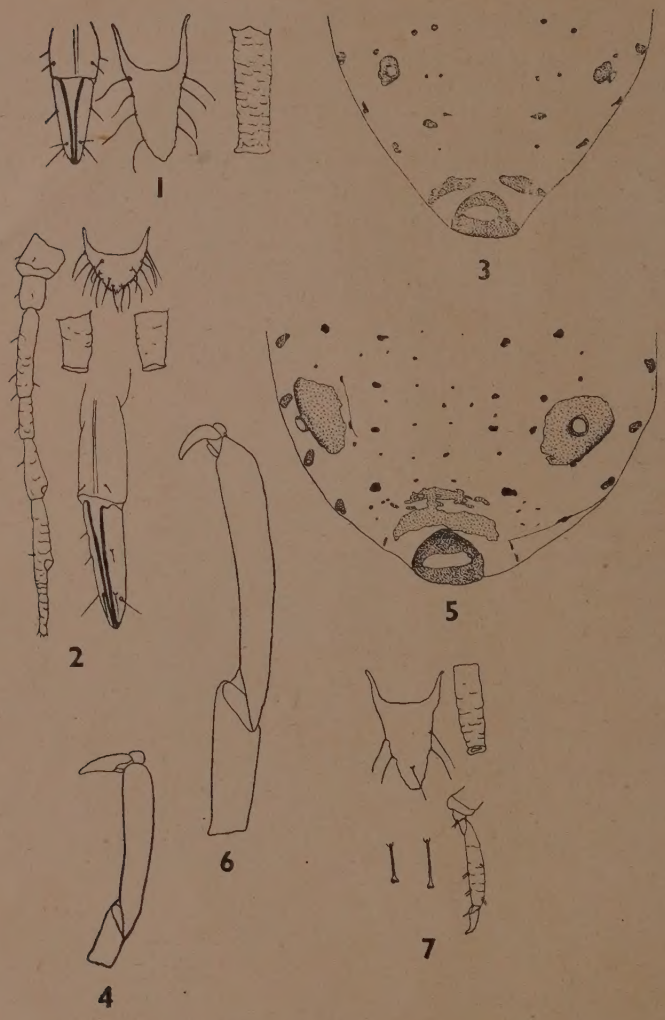


Fig. 1.—*Aphis pseudeuphorbiae* sp. n., apt. viv. female, siphunculus, cauda and hind tarsus, x.115.

Fig. 2.—*Brachyunguis echinopis* sp. n., apt. viv. female, antenna, siphunculi, cauda and apex of rostrum, x.115.

Fig. 3.—*Cinara palaestinensis* sp. n., apt. viv. female, posterior part of abdomen, x.30.

Fig. 4.—*Cinara palaestinensis* sp. n., apt. viv. female, hind tarsus, x.115.

Fig. 5.—*Cinara excelsae* sp. n., apt. viv. female, posterior part of abdomen, x.26.

Fig. 6.—*Cinara excelsae* sp. n., apt. viv. female, hind tarsus, x.115.

Fig. 7.—*Coloradoa santolinae* sp. n., apt. viv. female, siphunculus, cauda, hind tarsus and longest hairs of sixth abdominal tergite, x.115.

apterae often having rhinaria on the third antennal segment and by its shorter rostrum. According to the descriptions Nevsky's *Xerophilaphis anuraphoides* (19, 20) is very closely related to *pseudocardui* Theobald, while also *Brachyunguis carthami* Das may be a synonym of *pseudocardui* Theobald.

Cinara palaestinensis sp. n.

Apterous viviparous female.

Morphological characters. Body oval, not very broad, about 2·40–3·30 mm. long. Dark sclerotic are: the head, pronotum, large areas on mesonotum, large paired sclerites on metanotum, on abdomen dorsally four rows (six on segments I and II) of small rounded "Muskelplatten," larger stigmal plates, the siphunculi, a narrow band with a wide gap in the middle on eighth tergite, the cauda, subanal plate and a crescent-shaped part of the subgenital plate. Mesosternum with a large, volcano-shaped, blunt, nude median tubercle. Dorsal hairs sparse, in single transverse rows per abdominal tergite, placed on minute, rather pale scleroites, about $\frac{1}{2}$ of median diameter of third antennal segment; eighth tergite with about 4–5 hairs on each half of the sclerotic band and a few more ventro-laterally. Head normal, with distinct inner suture. Antennae $\frac{1}{3}$–$\frac{2}{3}$ length body, with the basal segments, the apices of third and fourth, and the distal half of fifth and the sixth segment dark, and with the rest pale; sometimes a rhinarium present on segments III–V; for proportions of segments see measurements. Antennal hairs not very numerous, up to as long as median diameter of third segment. Rostrum reaching to about the middle of abdomen; fourth and fifth segment about as long as fifth antennal segment, with about 2–4 hairs on fourth besides those at its very apex. Siphunculi on very small cones, the largest diameter of which is about $\frac{1}{3}$ length of third antennal segment; the cones bear only one row of hairs. Cauda normal. Legs with the distal half of the femora and hind tibiae, distal $\frac{1}{3}$ of the other tibiae and the bases of all the tibiae dark, the rest pale; first tarsal segments dorsally half as long as ventrally.

Colour. Not given.

Lengths in mm.:

					Antennal segments				Rhinaria on segments		
No.	Body	Antennae	Diam. siph.	Length, cau.	III	IV	V	VI	III	IV	V
1.	3·22	1·11	0·15	0·12	0·42	0·17	0·21	0·15	1 & 0	1 & 0	1 & 0
2.	2·82	1·11	0·14	0·13	0·40	0·19	0·22	0·14	0 & 0	0 & 0	1 & 0
3.	2·46	1·06	0·12	0·10	0·40	0·19	0·20	0·13	0 & 0	0 & 1	0 & 0

(1, No. DI530; 2, No. DI599; 3, Rehovot, 5.vi.37.)

Localities and host-plant: Rehovot, *Pinus halepensis*, 5.vi.37, Nahaniya, 22.vi.42, and the numbers DI530 and 559 which probably were taken near Rehovot by Dr. Hecht about 1933.

Notes: In general habits this species is rather like *Cinara pini* (L.) (syn. *nuda* Mordvilko), but it differs from it, and from all species with a mesosternal tubercle in my collection, by its very small siphuncular cones. With No. DI559 went some alatae, but they are so damaged that a description would have no value.

Cinara excelsae sp. n.

Apterous viviparous female.

Morphological characters. Body broadly oval, about 3·00–4·00 mm. long. Browny yellow sclerotic are: the head, pronotum, a broad band across mesonotum with on posterior margin two transversely oval, darker, large "Muskelplatten," two large "Muskelplatten" on metanotum, irregular broad bands across seventh and eighth abdominal tergite,

the siphunculi, the subanal plate and the subgenital plate and the cauda which apically is darker; dark brown sclerotic are: the stigmal plates, four longitudinal rows of dorsal "Muskelplatten" (six on abdominal segments I and II) and two of ventral "Muskelplatten," and a few irregular scleroites at the bases of some of the hairs on abdominal segments I, V and VI besides some marginally on the other segments; the rest of the integumentum is membranous and faintly smoky, which is caused by an extremely fine, dense reticulation (wax-pores). Dorsal hairs very numerous, slightly pigmented, not in simple transverse rows per segment but irregularly placed, about 2–2⅔ times median diameter of third antennal segment; eighth abdominal tergite with some 20–28 hairs. No mesosternal tubercle present. Head normal with distinct median suture. Antennae about ⅘ length of body, pigmented as in the preceding species; usually rhinaria present on segments III, IV and V; interrelation of segments about as in the preceding species. Antennal hairs of rather different lengths, 1–1$\frac{7}{10}$ times median diameter of third segment. Rostrum reaching to the hind margin of the siphunculi or shorter; segments IV and V long and acute, ⅔–⅘ of third antennal segment; fourth segment with 4–6 hairs besides those at its very apex. Siphunculi on large, very hairy cones, the maximal diameter of which is about as long as third antennal segment. Cauda normal. Subgenital plate oval, evenly pigmented. Legs with the femora very dark brown, paler towards base, the tibiae jet black with an area on basal half from just paler (fore legs) to yellowish (usually hind legs); first tarsal joints dorsally about ⅔ of their ventral length.

Colour. Not given. Covered by grey powder.

Lengths in mm.:

No.	Body	Antennae	Diam. siph.	Length, cau.	Antennal segments III	IV	V	VI	Rhinaria on segments III	IV	V
1.	3·82	1·52	0·58	0·16	0·58	0·25	0·28	0·21	1 & 2	2 & 2	1 & 1
2.	3·22	1·39	0·48	0·16	0·52	0·23	0·25	0·19	3 & 2	2 & 1	2 & 1
3.	3·40	1·40	0·56	0·15	0·52	0·23	0·25	0·20	2 & 1	1 & 1	1 & 1
4.	3·00	1·37	0·50	0·14	0·50	0·22	0·26	0·19	1 & 1	1 & ?	1 & ?

(1–3, Beth-Hakerem, 29.iv.46; 4, Jerusalem, 26.iv.46.)

Localities and host-plant: Beth-Hakerem, *Pinus excelsa*, 29.iv.46; Jerusalem, 26.iv.46.

Notes: A fairly normal species which comes in Börner's 1939 (3) conception of *Cinara* Curtis—*i.e.*, in a subgenus which contains species like *C. pinea* (Mordvilko), *C. piceae* (Panzer), etc. It is easily recognisable by its numerous long dorsal hairs and its very dark tibiae, which are much darker than any other part of the body.

The correct generic location requires a short discussion. The type of *Cinara* Curtis is *Aphis pini* L. The description of *pini* by Linné is such that it may apply to at least five species living on *Pinus silvestris*. Therefore the name is available for any of these species. It has alternately been used for two species, one also known as *pineti* Koch or *pinea* Mordvilko, the other as *nuda* de Geer or *nuda* Mordvilko. It is clear that De Geer (6) believed that his *Aphis nuda pini*, etc., was *pini* L. Therefore Goeze (9) and Gmelin (8) were in all respects correct in placing *Aphis nuda pini* of De Geer, an invalid name, as synonym of *pini* L. As De Geer describes his species so clearly that a misunderstanding has never occurred as to what he meant, we have one very clear and distinct conception of *Aphis pini* L., which has the advantage of being the oldest interpretation. Apparently this point of view was also taken by Börner in 1932 (2) when he placed "*nuda* Geer"as a synonym of *pini* L. and described

pini L. accordingly. But in 1939 (3) he erected a new genus, *Cinaria*, for *Aphis laricis* Walker—*i.e.*, for species with a well-developed mesosternal tubercle to which *nuda* Mordvilko=*pini* L.—of Goeze (9), Gmelin (8), Börner, 1932 (2), and Braun (4)—belongs. The name *Cinara* he reserved in 1939 for species without a mesosternal tubercle and with the first tarsal segment dorsally about $\frac{2}{3}$ as long as ventrally. This means that he then accepted the opinion of Theobald (1929) and others who described the aphid also known as *Lachnus pineus* Mordvilko (*L. pineti* Koch nec Fabricius) under the name *pini* L. As I believe that it is more correct to accept the identity of *pini* L. with *Aphis nuda pini* of De Geer, Börner's genus *Cinara* of 1939 requires a new name, for which I propose the name **Cinarella** nom. nov., type *Lachnus pineus* Mordvilko. This is here considered a subgenus of *Cinara* Curtis. *Cinara excelsae* sp. n. belongs to the subgenus *Cinarella* subgen. n., *C. palaestinensis* sp. n. in the genus *Cinara* Curtis *sensu stricto*.

Coloradoa artemisiae (Del Guercio).

This species is common in Europe on a number of *Artemisia* species. One aptera was discovered in a large sample of *Macrosiphoniella absinthii* (L.) from Palestine.

Coloradoa santolinae sp. n.

Apterous viviparous female.

Morphological characters. Body broadly oval, entirely unpigmented, dorsally and also ventrally covered with numerous long, slender, stiff hairs, the apices of which are fan-like enlarged, striate and serrulate and which are placed on normal, small bases. Dorsal hairs of two very different lengths, so that stouter hairs about 3 times as long as basal diameter of third antennal segment are interspersed with thinner hairs as long as that diameter; eighth abdominal tergite with 8 long hairs. Head as typical for the genus, strongly transverse, broad, with large, strongly bulging compound eyes without apparent triommatidion (=ocular tubercle); front convex, nearly straight, with rather long hairs. Antennae finely imbricated, without secondary rhinaria, with on third segment a few hairs which are only $\frac{1}{3}$–$\frac{1}{4}$ of basal diameter of third segment. Rostrum reaching just past middle coxae; apical segment stiletto-shaped, almost as long as second joint of hind tarsi, with 2 very short hairs on basal half, and some, probably 6, near apex. Siphunculi short, almost cylindrical but just before the flange a little tapering, pale, imbricated, with very small flange. Cauda pale, conical, just blunt, slightly constricted at base and again at basal $\frac{2}{3}$, with 5 hairs. Legs pale, slightly brownish yellow; femora with rather long, widely dispersed transverse striae.

Colour. Given as green.

Measurements of the type: Length of body, 1·38 mm.; antenna, 1·06 mm.; siphunculi, 0·11 mm.; cauda, 0·14 mm. Proportion of antennal segments:

$$\underset{\text{III}}{100} : \underset{\text{IV}}{66} : \underset{\text{V}}{54} : \underset{\text{VI}}{(46+104)}.$$

Locality and host-plant: Jerusalem, *Achillea santolina*, 18.v.42.

Notes: One specimen was found in a pickled sample from the plant mentioned, consisting of apterous and alate *Brachycaudus helichrysi* (Kaltenbach). As the species is very typical I venture to describe it from that specimen. It differs from all other species of *Coloradoa* and

Neaphis so far described by its long hairs and short siphunculi. The aphid looks like a small *Pleotrichophorus* Börner, but the structure of the head and compound eyes, the absence of rhinaria on the third antennal segment, etc., characterise it immediately as a *Coloradoa* Wilson.

Dactynotus sonchi (Geoffroy).

Although this species has already been recorded from Palestine by Bodenheimer (1), I mention it here because Linné is usually quoted as author, as also by myself (17) in a paper on European *Dactynotus* species. The description by Geoffroy (7), quoted by Linné (17), is older, however, and the correct author's name is therefore Geoffroy.

Dactynotus (Uromelan) carthami sp. n.

Apterous viviparous female.

Morphological characters. Body spindle-shaped to elongated pyriform, about 2·40–3·20 mm. long. Dorsal hairs rather long, normally numerous, all with distinct, mutually free, dark to black scleroites at their bases. Antesiphuncular sclerites absent, postsiphuncular sclerites well developed. No marginal sclerites present. Marginal tubercles when present on abdominal segments II–V very small, not much larger than the papilla of a marginal hair. Frontal tubercles normal, well developed. Antennae about 1–1¼ times length of body, dark except the pale extreme base of third segment; third segment on basal ½ to nearly ⅔ part with 15–27[1] rather large to large much protruding rhinaria, so that the part bearing the rhinaria looks very conspicuously thicker than that more distally; processus terminalis 4½–5½ times base of sixth segment. Hairs on third segment up to about ⅝–⅞ length of basal diameter of that segment. Rostrum reaching to hind coxae; last segment rather slender, about 1⅛ times second joint of hind tarsi, with 7–10 hairs besides the three apical pairs. Siphunculi black or blackish sclerotic, about ⅛–⅛ length body, stout, usually gradually tapering from base to apex, usually rather conspicuously constricted just below the flange, distinctly reticulated on distal ⅔ part or sometimes ½ part and the rest finely acutely imbricated. Cauda blackish sclerotic, slender with a distinct constriction, ½–⅔, usually just over ½ the siphunculi in length, with about 16–22 hairs. Legs long and slender; hind femora with basal half pale, the rest blackish; tibiae all dark; first tarsal joints with 5, 5, 5 hairs.

Colour. Not given.

Lengths in mm.:

Body	Antennae	Siphunculi	Cauda	Rhinaria on III	Antennal segments III	IV	V	VI
2·77	2·74	0·79	0·47	20 & 21	0·72	0·45	0·43	0·17+0·73
2·52	2·90	0·77	0·45	27 & 27	0·71	0·51	0·44	0·17+0·82
2·40	2·71	0·72	0·46	15 & 16	0·68	0·45	0·44	0·16+0·74
2·43	2·58	0·69	0·44	19 & 20	0·65	0·42	0·42	0·15+0·69

Alate viviparous female.

Morphological characters. Very much like apterous female, but with the customary black sclerotic head and thorax. Antennae comparatively longer; third segment with about 40–70 rather large and bulging rhinaria over whole length; fourth segment without rhinaria; processus terminalis up to 6¼ times base of last segment. Siphunculi and cauda both more slender, the former more cylindrical than in apterae. Venation of the wings normal.

[1] One with traces of ocelli had 32 and 35 rhinaria over whole length of third segment.

Colour. Not given.

Measurements of one specimen: Length of body, 2·99 mm.; antennae, 3·36 mm.; siphunculi, 0·88 mm.; cauda, 0·44 mm. Proportion of antennal segments:

$$\frac{100}{III} : \frac{72}{IV} : \frac{64}{V} : \frac{(21+111)}{VI}.$$

Rhinaria on third antennal segments: 48 and 51.

Localities and host-plants: Deganyia, *Carthamus glaucus*, 29.v.43; *idem.*, 31.v.43.

Notes: This species closely resembles *Dactynotus* (*Uromelan*) *jaceae* (L.), but there are certain distinguishing features. While in *jaceae* L. and its subspecies the rhinaria on the third antennal segment are small, they are conspicuously larger in *carthami*, and they cover a slightly larger portion of the segment in apterae. The siphunculi are much stouter and particularly the subapical constriction gives them a quite different aspect. But in all other respects *jaceae* and *carthami* are very similar.

Geoica lucifuga (Zehntner).

One specimen of a *Geoica* I can only identify as *Geoica lucifuga* Zehntner, a species originally described (26) from the roots of *Saccharum* from Java, but later also found on other GRAMINEAE in other countries. The identification of *Geoica* species has been made much easier by a recent paper by Roberti (23) on Italian Fordini.

Hyadaphis coriandri (Das) and *H. obscurus* (Theobald).

A number of samples from various UMBELLIFERAE contained specimens of which some answer to the description of *Brevicoryne coriandri* Das (5), already recorded by Bodenheimer (1), others to that of *Hyalopterus obscurus* Theobald, also recorded by Bodenheimer but under the name *Hyadaphis conica* Börner. What Börner (2) says about this species can hardly be called a description, but it is sufficient to establish that *conica* is a synonym of *obscura* Theobald. The species described by Hall (13) as *Hyalopterus peucedani* sp. n. seems to be the same insect as *coriandri* Das. *H. obscurus* has apterae with five antennal segments, a very short processus terminalis and very short, conical siphunculi; *coriandri* Das has apterae with six antennal segments, a longer processus terminalis and longer, less conical siphunculi. But in all the tubes, whether they contained mixtures of both apterae or consisted of apterae of only one of the two forms, only one type of alata could be found, which answers to the descriptions of both alate *obscura* and alate *coriandri*. Some apterous forms were found which are rather intermediate between the *coriandri* and *obscura* apterae. Although it is possible that there are in fact two species with different apterae but similar alatae, it seems likely that both forms of *coriandri* and *obscura* are only one species. It has apparently not been noted that also in *Hyadaphis foeniculi* Passerini (*H. xylostei* Schrank, *H. melliferum* Hottes, *H. schranki* Hille Ris Lambers, *H. sii* auctt. nec Koch according to Börner) two distinct types of apterae viviparae occur. *H. obscura* (Theobald), *H. conica* Börner and *H. peucedani* (Hall) are considered synonyms of *coriandri* Das.

Idiopterus nephrelepidis Davis.

This species was not previously recorded from Palestine. It was found on the ferns *Dryopteris rigida* and *Nephrodium* species.

Lachnus crassicornis sp. n.

Apterous viviparous female.

Morphological characters. Body shortly oval, only about 2·2–2·5 mm. long. Head, pro- and mesonotum brown, subgenital plate blackish brown, the stigmal plates and intersegmental sclerites very pale brownish yellow; the rest, also the siphunculi and cauda, quite unpigmented. Hairs extraordinarily numerous, not on darkened bases, shorter than median diameter of third antennal segment, also the antennae and legs covered with the same dense pile, which I know only from some *Stomaphis* species. Head normal, median suture only visible near the posterior margin of vertex. Antennae more than half as long as body, blackish brown to black, with the flagellum uncommonly thick, hardly thinner than second segment, with third segment about as long as IV+V+VI; fourth a little shorter than fifth; fifth about twice as long as the short, rather oval sixth segment; sometimes a very small rhinarium present on either or both third and fifth segments. Hairs on third segment about $\frac{2}{3}$–$\frac{3}{3}$ of its diameter in the middle, at an angle of about 60° with its axis. Rostrum nearly reaching the siphunculi, with sharply acuminate last segment, which is about $1\frac{7}{10}$–$1\frac{8}{10}$ times as long as second joint of hind tarsi. Siphunculi quite pale and therefore very difficult to discover, not placed on hairy cones, with outer surface distinctly, strongly transversely reticulated; outer diameter of apex about like median diameter of third antennal segment. Cauda well separated, $1\frac{7}{10}$–$2\frac{3}{3}$ times as wide at base as long, semi-oval, like the anal plate quite unpigmented. Legs very long, as dark as the antennae and subgenital plate, with only the very bases of the femora and the distal half of the tibiae except their apices pale to slightly brownish; at the apices of only the hind tibiae very long and much stouter hairs occur between the pile; these long hairs are about twice diameter of third segment while the other hairs are as long as that diameter; first tarsal joint ventrally twice as long as dorsally.

Colour. Not given.

Lengths in mm.:

No.	Body	Antennae	Antennal segments III	IV	V	VI	Rhinaria on segment III	IV
1.	2·32	—	0·54	—	—	—	0 & —	—
2.	2·44	1·44	0·59	0·24	0·26	0·12	1 & 0	0 & 0
3.	±2·40	1·39	0·60	0·22	0·24	0·12	1 & 0	1 & 0

Locality and host-plant: Both not given, but as one apterous *Thelaxes confertae* Börner was in the tube, it seems likely that the host was a *Quercus* species.

Notes: This species undoubtedly belongs to the genus *Lachnus* Burmeister, but within that genus it has a unique position by reason of the curious pigment-less siphunculi, cauda and subanal plate. The siphunculi are difficult to find in the very well cleared specimens, and in balsam mounts probably would be considered absent. The antennae are thicker than in other *Lachnus* spp., and also by their unusual number of hairs resemble those of *Stomaphis* Walker, but for the interrelation of the antennal segments which resembles that of *Lachnus exsiccator* Altum. In the larvae also the subgenital plate is unpigmented. The longer hairs on the hind tibiae are also found in some other *Lachnus* spp.—*e.g.*, in *L. exsiccator*, but in that species they occur

over a much larger part of the tibiae. The first tarsal joints of some embryones show nine long hairs and one very short, thick, thorn-like hair which is also present in adults.

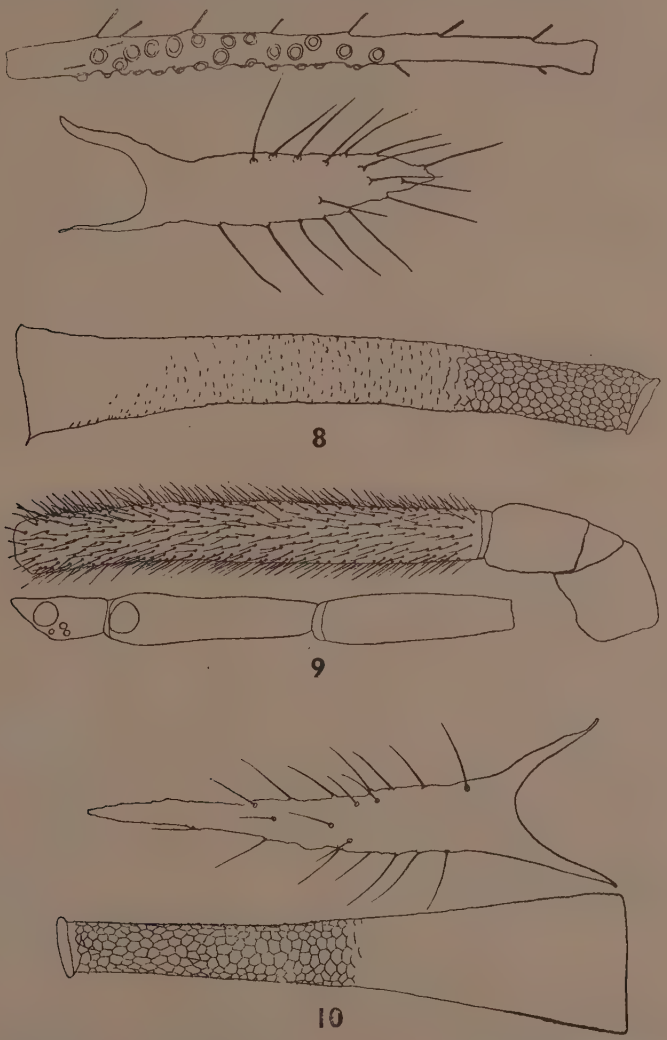


Fig. 8.—*Dactynotus* (*Uromelan*) *carthami* sp. n., apt. viv. female, third antennal segment, siphunculus and cauda, x.115.

Fig. 9.[1]—*Lachnus crassicornis* sp. n., apt. viv. female, antenna with the hairs only of third segment, x.115.

Fig. 10.—*Macrosiphoniella macrura* sp. n., apt. viv. female, siphunculus and cauda, x.115.

[1] The number of hairs and their arrangement in this figure are drawn as accurately as possible.

Lipaphis erysimi (Kaltenbach).

Aphis pseudobrassicae Davis has been recorded from a number of countries in Asia, Africa and America. I cannot separate material from the various continents from that of *Lipaphis erysimi*. This species, which is rather variable, infests a number of CRUCIFERAE in Europe. Its hosts there are *Erysimum* species, *Capsella bursa-pastoris*, *Sisymbrium* species, *Sinapis* species and related CRUCIFERAE. Apterous males and oviparae were collected from numerous CRUCIFERAE, but as yet no fundatrices have been found, so that the true winter-host is still unknown. *Aphis "Myzus" conterminus* Walker from *Cakile maritima* is apparently also a synonym. In Palestine this species was found on *Sinapis alba*, *Rhaphanus sativus* and one stray alata on *Calendula officinalis*, which is not a host-plant.

Lipaphis lepidii (Nevsky).

Palestine material from *Lepidium draba* agrees completely with the description of *lepidii* from *Lepidium repens* from Central Asia. It differs from the subspecies *cardariae* Knechtel and Manolache described from *Lepidium draba* from Roumania.

Macrosiphoniella macrura sp. n.

Apterous viviparous female.

Morphological characters. Body elongated oval, about 2·8 mm. long. Dorsal hairs rather longer than basal diameter of third antennal segment, with slightly incrassate apices, placed on strongly tubercular, well-developed, apparently little pigmented scleroites; further sclerites cannot be seen in the material. Frontal tubercles strongly developed, diverging, with almost straight inner sides. Antennae almost smooth, about as long as body, pale with the apices of segments III–V, sixth segment and the part bearing the rhinaria on third segment somewhat dark; third segment with about 13–18 round, rather flat, medium-sized rhinaria irregularly placed along one side on basal $\frac{1}{2}$–$\frac{5}{7}$ part; processus terminalis only $2\frac{7}{10}$–3 times as long as base of sixth segment, much shorter than third segment. Antennal hairs about as long as basal diameter of third segment. Rostrum reaching to just past hind coxae; apical segment slender, stiletto-shaped, about $1\frac{1}{4}$ times second joint of hind tarsi. Siphunculi thick, a litttle more than $\frac{1}{4}$ length body, pale at base, gradually darker as far as the reticulated area which is evenly dark; base very thick, tapering strongly until the reticulated area and then more slowly till the small flange; apical half very finely reticulated, rest almost smooth. Cauda pale, about $\frac{3}{4}$ of the siphunculi, at base even narrower than the siphunculi at their bases, with basal $\frac{1}{4}$ strongly tapering, distal $\frac{3}{4}$ very thin and still tapering till the extremely thin, long apex; about 17 hairs present. Legs long and slender, with the distal parts of the femora and the apices of the tibiae dark; first tarsal joints with 3 spiny hairs, sometimes with more hairs.

Colour. Not given.

Lengths in mm.:

No.	Body	Antennae	Siphunculi, l'th × base	Cauda, l'th × base	Rhinaria on III	Antennal segments III	IV	V	VI
1.	2·84	2·99	0·84 × 0·23	0·63 × 0·20	13 & 16	0·86	0·62	0·47	0·19 + 0·59
2.	2·80	2·82	0·73 × 0·21	0·55 × 0·18	18 & ?	0·83	0·57	0·46	0·20 + 0·54

Locality and host-plant: Jerusalem, host-plant not given, 28.viii.42.

Notes : Although in the rather poor material no antesiphuncular or other sclerites can be seen, all the other characters classify this species as a rather typical *Macrosiphoniella* Del Guercio. The extremely slender cauda and the very thick siphunculi, combined with the short processus terminalis, make this aphid easily recognisable. In general appearance it differs very much from any other species of this genus which I have seen. The hairs seem to stand separately on rather distinct tubercles.

Though the host is not given with the material, one may expect that it belongs to the ANTHEMIDEAE, to which the structure of the ultimate rostral segment points.

It is possible that in this species sometimes more than three hairs on the first tarsal joints may occur. In one of the first tarsal joints, of which only one hair is not broken, this hair is placed so that it suggests a lateral hair as common in *Dactynotus* Raf. All the other legs show distinctly three hairs of the thorny type common in *Macrosiphoniella*.

Macrosiphum (*Sitobion*) *fragariae* (Walker).

Bodenheimer (1) lists "*Amphorophora cf. rubiella* Theo." from GRAMINEAE. This evidently was *fragariae* Walker, of which some samples from GRAMINEAE were received by me.

Myzaphis turanica Nevsky.

Two samples of a *Myzaphis* collected on cultivated *Rosa* species in Palestine consist of aphids strongly resembling *Myzaphis rosarum* (Kaltenbach). There is a characteristic difference between this material and that from European *Rosa* in the shape of the median frontal processus. In all apterae of *rosarum* this structure is markedly rectangular in specimens from various European countries, including Italy (*cf.* Del Guercio's figures of *Francoa rosarum* Guercio, a synonym). But in the Palestine aphids the front shows a rounded bulge between the antenniferous tubercles. This certainly distinguishes it from the European *rosarum*. Nevsky (20) gives a figure of a head of an apterous *Myzaphis rosarum* from Turkestan to which he gives the subspecific name *turanicus* Nevsky. This shows quite the same profile as the Palestine specimens which, therefore, seem to belong to the Central Asiatic form, which I consider a good species. It may be added here that the European *Myzaphis rosarum* (Kaltenbach), besides occurring on *Rosa* species, normally completes its cycle also on *Potentilla fruticosa*, and occasionally in summer lives on *Fragaria*.

Myzocallis bodenheimeri sp. n.

Alate viviparous female.

Morphological characters. Body rather slender and elongate, about 2–2·2 mm. long. Head pale sclerotic with two submedian pale brownish stripes, thorax rather pale brownish, abdomen with on all tergites rather strongly oval to transversely rectangular spinal sclerites, which are partly cleft by a narrow, deep median incision from anterior margin or possess a central perforation ; on the anterior tergites both ends of these sclerites are conspicuously arched without deserving the name of dorsal tubercles ; lateral sclerites little pigmented, developed into not very pronounced mammiform tubercles. Dorsal hairs

inconspicuous, all slightly knobbed, of different lengths, very numerous; spinal sclerites of abdominal tergites I and II with some 18 hairs of $\frac{2}{3}$–$1\frac{1}{2}$ median diameter of third antennal segment, that on third segment with some 22, that on eighth with 4 longer and 2–4 more anterior, shorter hairs; marginal hairs on segments I–IV similar in length, but fifth to eighth tergites each marginally with a pair of long, knobbed hairs of about $3\frac{1}{2}$–4 times median diameter of third antennal segment. Head with somewhat unusual frontal structure; between the small frontal tubercles and somewhat more orally a broad, dome-like processus is conspicuous, on top of which on a large tubercle the median ocellus is placed; also the lateral ocelli on (less conspicuous) tubercles. Antennae only about $\frac{1}{2}$–$\frac{6}{11}$ length of body, faintly imbricated, pale, with the pedicellus, the apices of the segments of the flagellum and the area around the rhinaria on sixth segment dark; third segment near base with 2–3 large roundish rhinaria; processus terminalis much shorter than base of sixth segment. Hairs on third segment very sparse, inconspicuous, about $\frac{2}{3}$ the middle diameter of that segment. Rostrum reaching the middle coxae, with rather acute, slender apical segment, which bears about 8 hairs besides the 3 apical hairs. Siphunculi pale, normal. Cauda pale, strongly knobbed, the portion past the constriction shortly oval; anal plate deeply bilobed, the incision just narrower than the lobes. Legs pale; tibiae from distal $\frac{2}{7}$ (hind) to distal $\frac{1}{2}$ (fore tibiae) finely spinulose; first tarsal joints of all legs with 7 hairs—viz., dorsally 2 long hairs, laterally ventrally and ventrally terminally two pairs of 2 long hairs, between the last one very short hair which is only $\frac{1}{4}$–$\frac{2}{7}$ of the length of the long hairs. Wings with normal venation; forewings conspicuously narrow, with rather pale veins, hyaline with the exception of a small brown spot in the stigma near its base.

Colour.

Lengths in mm. and proportions of antennal segments:

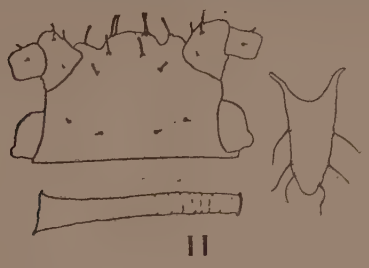
No.	Body	Antennae	Siphunculi	Cauda	Rhinaria on III	Prop. of antennal segments III : IV : V : VI
1.	2·01	1·09	0·10	0·16	3 & 3	100 : 69 : 69 : (51+31)
2.	2·23	1·20	0·10	0·17	2 & 2	100 : 82 : 63 : (44+28)

Last larval instar.

Morphological characters. Body rather flat, oval, with a conspicuous sclerotic pattern and a great many short to very long stiff, knobbed hairs on strong bases; from head to eighth abdominal tergite a double row of rounded to (in the middle of the body) transversely rectangular sclerites which all have a paler centre, sometimes even are quite pale with only the posterior and lateral margin dark brownish; of these sclerites one pair, on the mesonotum, is conspicuously darker than all the others; marginally a similar row of sclerites is present, of which those on fifth segment (just cephalad the siphunculi) are broken into an innermost and outermost pair; those on seventh segment are very small and bear one hair each; between the spinal and marginal sclerites compact groups of pleural sclerites are present. On second abdominal tergite 4 long (4 times diameter third antennal segment) and about 6–9 shorter ones on the spinal sclerite, 18–24 pleural hairs and 4 very long marginal hairs (6–7 times diameter third antennal segment) besides 20–30 shorter marginal hairs. Head with convex but not irregular front; median tubercle (but not the median process) present but very small. First antennal segment with a marked process bearing one capitate hair on inner apex; third antennal segment with on inner side 3 long capitate hairs (3 times as long as median diameter of the segment) and on outer side 3 short, inconspicuous hairs ($1\frac{1}{4}$–$1\frac{1}{2}$ times diameter of the segment); the other segments only with short hairs. First tarsal joints with 5 hairs, the dorsal pair wanting. Proportion of antennal segments about as in the mature insect.

Locality and host-plant: Jerusalem, *Quercus ithaburensis*, 31.v.46.

Notes : I cannot identify this species with any described relative of which identification is possible. The number of dorsal hairs is exceptionally large, conspicuously so in the larvae, but on closer examination also in the two adults which were in the sample. Also the structure of the front is very unusual, but it occurs in a less marked form in some American relatives. I take pleasure in naming this species after Prof. Dr. F. S. Bodenheimer of the Hebrew University, Jerusalem.



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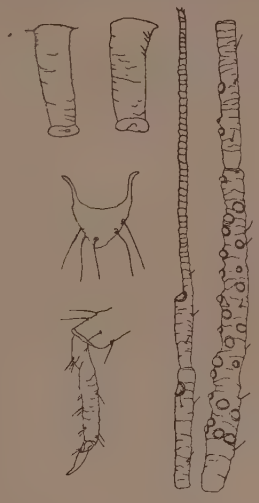

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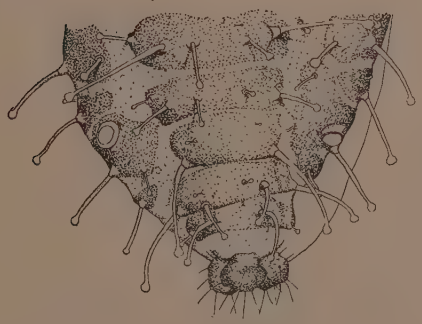

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Fig. 11.—*Myzaphis turanica* Nevsky, apt. viv. female, head dorsally, siphunculus and cauda, x.115.

Fig. 12.—*Myzocallis bodenheimeri* sp. n., al. viv. female, cauda and subanal plate, x.115.

Fig. 13.—*Myzocallis* (*Dryomyzus*) *glandulosus* sp. n., apt. viv. female, posterior part of abdomen, x.115.

Fig. 14.—*Sappaphis palaestinensis* sp. n., al. viv. female, flagellum of antenna, siphunculi, cauda and hind tarsus, x.115.

Myzocallis glandulosus sp. n.

Apterous viviparous female.

Morphological characters. Body oval, about 0·65–1·30 mm. long. Tergum with often indistinct, little pigmented, rather large, paired or mutually fused spinal sclerites from pronotum to eighth abdominal tergite, and with rather similar marginal sclerites of which those on fifth abdominal tergite have a dorsal process which is often free; pleural sclerites if present small. Dorsal hairs all thick, with globularly swollen apices, placed on strong bases, but their length and thickness not uniform; besides long hairs on the head each body segment has 2 long spinal hairs and between these some shorter and thinner hairs, 2 long marginal hairs and some shorter ones and a few pleural hairs. The length of the longest spinal hairs shows a constant rhythm from pronotum to eighth abdominal tergite; expressed in terms of the median diameter of third antennal segment their length on the different segments is approximately as follows:

On pronotum, 3·0; mesonotum, 8·3; metanotum, 3·8; Abdominal tergite I, 1·7; II, 6·7; III, 6·7; IV, 10·3; V, 3·7; VI, 11·0; VII, 7·7; VIII, 8·3.

In small specimens the longest spinal hairs are very much longer than those between them on the same tergite, and often up to $\frac{2}{5}$ the length of the hind tibiae. Abdominal tergite IV has about 4–9 spinal hairs, 2–4 pleural ones and 4–12 marginal hairs. Antennae $\frac{2}{3}$–$\frac{4}{5}$ length body, pale with the apices of the segments of the flagellum dark, of six or sometimes, in very small specimens, of five segments, but in these cases the lost division between third and fourth segment is still recognisable by a pigmented area; exceptionally third segment with 2 small round rhinaria near the middle, normally without; in small specimens third to fifth segments mutually about equally long and much shorter than the processus terminalis; in larger specimens third segment longer than fourth or fifth and about as long as the processus terminalis; the latter much longer than base of last segment. First and second segment with short knobbed hairs, third with very short, inconspicuous blunt hairs. Rostrum almost reaching the hind coxae; apical segment acute with straight sides about $1\frac{1}{3}$–$1\frac{1}{2}$ times second joint of hind tarsi, with 4 hairs besides the three apical pairs. Cauda strongly knobbed, rather short; the knob just broader than long. Anal plate markedly bilobed, the incision rather V-shaped. Legs rather pale, thin, with some faintly knobbed hairs on the femora and bases of the tibiae; first tarsal joints with 5 hairs, all placed ventrally.

Colour. Not given.

Lengths in mm. and proportions of antennal segments:

No.	Body	Antennae	Siphunculi	Cauda	Prop. of antennal segments III : IV : V : VI
1.	0·86	0·75	0·04	0·06	100 : 82 : 92 : (72+105)
2.	0·97	0·79	—	—	100 : 68 : 76 : (60+103)
3.	1·27	0·98	—	—	100 : 73 : 72 : (50+86)
4.	0·79	0·64	—	—	100 : 85 : 94 : (80+126)
5.	0·64	0·66	—	—	100 : 95 : 102 : (80+122)
6.	0·74	0·58	—	—	100 : 100 : 98 : (87+139)

(1–2, from *Quercus ithaburensis*, Jerusalem, x.45; 3, *idem*, Kefar Saba, 7.xii.45; 4–6, from *Quercus* species, Mikve Israel, 31.x.39.)

Localities and host-plants: Localities and plants mentioned above.

Notes: The various samples of this species mutually differ rather strongly. The Mikve Israel sample consists only of very small specimens with comparatively extremely long dorsal hairs and long antennae, while the abdominal sclerotisation can hardly be seen. Other samples show rather maculated aphids with shorter hairs. Because of the unusual rhythm of the hair length and the presence of apterae as the prevailing

form, I think the erection of a separate subgenus is warranted, which I name *Dryomyzus* **subgen. n.,** type *Myzocallis* (*Dryomyzus*) *glandulosus* sp. n.

Pemphigus lichtensteini Tullgren.

On *Populus* species from various Palestine localities. Recently Roberti (24) listed *Pemphigus globulosus* Theobald as a synonym of *lichtensteini* Tullgren. This is correct. The most characteristic feature of *globulosus* is a very large rhinarium at the apex of the fifth antennal segment, and this same character is present in the spring migrants of *lichtensteini*, of which I was able to examine cotypic specimens presented by Prof. Tullgren. In the gall only two generations develop, of which the second is completely alate, so that apparently the species migrates, but the summer hosts have not yet been discovered.

Pentatrichopus tetrarhodus (Walker).

This aphid, already recorded from Egypt, was collected on cultivated *Rosa* species. The material completely agrees with European material of the second generation.

Rhodobium porosum Sanderson.

Material recently received from Mr. M. D. Leonard, Washington, and identified by him as *Myzus porosus* Sanderson, answers completely to the descriptions of that species by Hottes and Frison (16) and Mason (18). The species was originally described from *Fragaria*, and the description of specimens from *Fragaria* by Patch (22) differs rather strongly from that by the authors who describe it from *Rosa*. Hottes and Frison and Mason had access to Sanderson's types, and as they identify the specimens from both *Rosa* and *Fragaria* as *porosus*, one has to accept that the name was rightly used for the American species from *Rosa*. *Macrosiphum rosaefolium* Theobald, which I, after finding it in hot-houses in the Netherlands, used as type for the new genus *Rhodobium* (1947), is undoubtedly a synonym of the American *porosus* Sanderson, as comparison of material from various Asiatic and African countries showed.

Rhopalosiphum splendens (Theobald).

Numerous alatae were collected near Jerusalem on a piece of paper. This species, which lives on GRAMINEAE, was originally described from Egypt, but recently it was recorded by Palmer (21) from Colorado, and I also received specimens collected from the roots of rice (*Oryza sativa*) from Surinam, South America.

Sappaphis crataegi (Kaltenbach).

Of the many European species of *Sappaphis* this one is easily recognised by its very short antennal hairs. In Europe it hibernates as eggs on *Crataegus* and spends the summer more or less subterraneously

on various UMBELLIFERAE, such as *Daucus*, *Aethusa*, *Apium*, *Petroselinum*, etc. The Palestine specimens were taken on *Foeniculum piperitum*. Probably *Anuraphis apiifolia* Theobald is a synonym of this species.

Sappaphis angelicae (Koch).

S. angelicae Koch is, according to my observations, not limited to *Angelica* as a summer-host. I found it in the Netherlands also on *Anthriscus* (as well as *Sappaphis hirsutissima* Börner which lives only on that host), on *Aethusa*, *Silaus flavescens*, etc. It is probably the same species as that described as *Anuraphis foeniculum* Theobald, and *Aphis ferruginea-striata* Essig, found on *Apium* in California, is also a synonym of *angelicae* Koch according to material from Prof. Essig.

Sappaphis palaestinensis sp. n.

Apterous viviparous female.

Morphological characters. Body rather elongated oval, about 1·30–2·00 mm. long. Tergum membranous with rather numerous, spiny hairs, of which particularly those spinally and pleurally have conspicuous, dark scleroites at their bases; seventh and eighth abdominal tergite, sometimes also the sixth and even fifth, with rather short, dark sclerotic transverse bars; dorsal hairs on third abdominal tergite about twice as long as those on third antennal segment, the 4 hairs on eighth abdominal tergite somewhat longer. Marginal tubercles semiglobular, medium-sized, present on pronotum and abdominal segments I and VII. Spinal tubercles normally present on vertex and seventh and eighth abdominal tergites, sometimes irregularly on other abdominal tergites. Head normal, without frontal tubercles, dark, with rather hairy front. Antennae often rather thick, about $\frac{2}{5}$–$\frac{3}{5}$ length body, brownish with darker apex, of six segments, without secondary rhinaria; third segment often more than twice the fourth; processus terminalis 2–2$\frac{3}{4}$ times base of sixth segment, about as long as third segment. Hairs on third segment $\frac{1}{2}$–$\frac{4}{5}$ median diameter of the segment, with slightly blunt apices. Rostrum reaching to or past the hind coxae; apical segment 1$\frac{1}{3}$–1$\frac{1}{3}$ times second joint of hind tarsi, with 2–4 hairs besides the three apical pairs. Siphunculi more or less tapering, dark to blackish, slightly irregularly imbricated, with large flange, about $\frac{1}{12}$–$\frac{1}{10}$ length body, about as long as second joint of hind tarsi. Cauda dark, short, about $\frac{2}{3}$–$\frac{1}{2}$ of the siphunculi, with 5 hairs. Legs brownish yellow with darker apices to the tibiae; first tarsal joints of hind tarsi with 2 or with 3 hairs.

Colour. Unknown.

Lengths in mm.:

No.	Body	Antennae	Siphunculi	Cauda	Antennal segments III	IV	V	VI
1.	1·84	0·96	0·16	0·08	0·25	0·14	0·11	0·08+0·26
2.	1·74	0·91	0·17	0·08	0·25	0·13	0·11	0·09+0·23
3.	1·94	1·07	0·17	0·08	0·30	0·14	0·12	0·08+0·30
4.	1·64	0·73	0·14	0·08	0·20	0·09	0·08	0·07+0·21
5.	1·36	0·64	0·13	0·08	0·18	0·08	0·08	0·06+0·17

(1–3, from *Iris atrofusca*, Jerusalem, 11.ii.46; 4–5, from *Iris lortetti*, Metulla, xi.45.)

Alate viviparous female.

Morphological characters. Head and thorax black sclerotic, abdomen with four rather long, mutually just free or laterally slightly coalescing dark sclerotic transverse bars on tergites III–VI and much shorter and isolated bars on tergites VII and VIII, with distinct marginal and postsiphuncular but no antesiphuncular sclerites. Antennae about $\frac{2}{3}$ length body, dark; third segment with about 19–35 irregularly placed, rather tubercular, mostly transversely oval rhinaria; fourth with 0–6 rhinaria; fifth with only the primary rhinarium. Siphunculi rather cylindrical, about $\frac{1}{15}$ length body. Cauda slightly more slender and more acute than in apterae. Legs with most of the femora dark and also the tibiae rather dark, especially at the very base and distally. Venation of the wings normal. Other characters about as in the apterous form.

Colour. Not given.

Measurements of one specimen: Length of body, 1·81 mm.; antennae, 1·31 mm.; siphunculi, 0·12 mm.; cauda, 0·09 mm. Proportion of antennal segments:

$$\underline{\underline{\text{III}}} : \underline{\underline{\text{IV}}} \quad \underline{\underline{\text{V}}} \quad \underline{\underline{\text{VI}}}$$
$$100 : 43 : 38 : (24+76).$$

Rhinaria on third antennal segment, 31 and 35; on fourth, 4 and 5.

Localities and host-plants: Metulla, *Iris lortetti*, xi.45; Jerusalem, *I. atrofusca*, 11.ii.46; and possibly Jerusalem, *I. germanica*, 30.iv.42, larvae only.

Notes: I introduced *Sappaphis* Matsumura to replace *Yezabura* Börner nec Matsumura. This genus has a certain number of easily recognisable species, but also a group of species which are very difficult, to which *lappae* Koch, *angelicae* Koch, *lauberti* Börner, *tulipae* Fonscolombe, *radicicola* Mordvilko and other species belong. To this group also the new species belongs. It resembles in many respects, particularly in the apterous form, *tulipae*, but its alatae are very different from all the others of this group. Characteristic of the alatae of this genus and some related genera is a compact central sclerite on the abdomen, but in the new species this sclerite is broken into quite or nearly free sclerotic bands across a number of abdominal tergites. *S. tulipae* also inhabits *Iris* species, but apparently only species with bulbs, not those with rhizomes. What exactly *Aphis iridis* Del Guercio, a species from the rhizome *Iris florentina*, is I do not know. This cannot be decided, as the collection of Del Guercio was most probably destroyed during the fighting near Naples.

Sappaphis plantaginea (Passerini).

I use this name for the species generally known as *Aphis* or *Anuraphis roseus* Baker, or as *Yezabura malifoliae* Fitch. In Bodenheimer's list this species is mentioned as *Yezabura discrepans* Koch, a name introduced by Börner. Though *discrepans* is an older name than *plantaginea*, I do not wish to use it. As the species is economically very important, it seems worthwhile to establish the correct nomenclature.

Koch, when describing this species under the name *Aphis pyri* Boyer de Fonscolombe, as a synonym added "*A. discrepans* Koch *in litt.*," quoting his own, rejected manuscript name as he does on other pages

of his book. Now I consider *Aphis discrepans* Koch a *nomen nudum*, since it was never used with a description. If Börner considers the description of Koch's *Aphis pyri* to belong to *Aphis discrepans* Koch, and this procedure is approved by others, everybody who describes an animal as a known species could equally well quote a manuscript name of his own as a synonym and thus add materially to the enormous list of existing synonyms.

The name *plantaginea* Passerini has been used by several authors to indicate a species living on the flower-stems of *Plantago maior*. Passerini, however, described his species from the undersides of the leaves of *Plantago media*, and gives an excellent description of the exules of the Rosy Apple Aphid. Though probably *Plantago lanceolata* is the most common host-plant of the Rosy Apple Aphid, I found that this species is also quite common on *P. media* in the southern part of the Netherlands. All this seems to prove conclusively that the name *plantaginea* is available for the Rosy Apple Aphid. It should be added that the exules of *Sappaphis aucupariae* (Buckton), which also live on *Plantago* species, are in life very similar to those of *plantaginea*, but *aucupariae* is so much rarer in Europe that it is not likely that Passerini ever saw it.

In Palestine this species was found both on Apple (*Pyrus malus*) and on *Anthirrhinum maius*, a very unusual host-plant.

Thelaxes confertae Börner.

This small species was collected on *Quercus ithaburensis*, *Q. calliprinus* and *Q. coccifera*, the latter being the host from which Börner described it.

Toxoptera aurantii (Fonscolombe).

This polyphagous species is well known as a pest of *Citrus* species, *Coffea*, *Thea*, *Camellia*, *Theobroma* and numerous other hosts, and was recorded several times as a pest of *Citrus* from Palestine. The material received, however, was collected on *Rhamnus alaternus* near Jerusalem. Now Del Guercio (10) has described two *Toxoptera* species from this host from Italy—viz., *T. alaterni* Guercio and *T. variegata* Guercio. There is no difference of any importance between the material from *Rhamnus alaternus* and that from many other host-plants in my collection, and as the material agrees well with both of Del Guercio's descriptions, I list *Toxoptera alaterni* Guercio and *Toxoptera variegata* Guercio as synonyms of *Toxoptera aurantii* (Fonscolombe).

Aphanostigma pyri (Cholodk.).

This species has not often been mentioned. Several samples, all from *Pyrus communis*, were received from Palestine, taken at Afula and Ein Harod.

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